Esri Response to NASA Request for Information - Preparation for the Development of a Community-Based Roadmap for NASA's Planetary Data Services

Response to Topic 7

7. Are there identifiable improvements to the current search capabilities of the PDS that would allow researchers improved access to data products and metadata?

• Name of submitter and contact information (institutional affiliation, E-mail address);

Tripp Corbett
National Government Sciences Team Accounts Manager

Esri
8615 Westwood Center Drive
Vienna, VA 22182

Phone: 703-506-9515 x1-8069
Email: ccorbett@esri.com

NASA has been a valued Esri customer for over 20 years. Esri's full ArcGIS product stack is available to the majority of the scientific community at no additional cost, including all NASA and USGS missions. The majority of academic institutions worldwide maintain educational site licenses which also give their staff and students unlimited access to the ArcGIS Platform. Finally, qualified nonprofit organizations and individuals of the public can receive the full analytics product stack for as little as $150. In addition to the powerful analytics and serving components above, ArcGIS includes a free viewing applications (such as Story Maps and ArcGIS Earth) for the public to interact with and query the data. Further, ArcGIS has a full suite of free and open Software Development Toolkits (SDKs) and Application Programmer Interfaces (APIs) that scientists can use to develop custom clients.

Since 1969, Esri has helped organizations map and model our world. Our GIS technology allows users to effectively manage and analyze geographic information so they can make better decisions. We offer flexible, configurable, and easy-to-use geospatial solutions that let anyone access informative maps and location apps anywhere and on any platform or device. These solutions are supported by our experienced staff and extensive network of business partners and international distributors.

Esri applications provide the backbone for the world's mapping and location analysis. Esri software is used in more than 350,000 organizations worldwide including each of the 200 largest cities in the United States, more than two-thirds of Fortune 500 companies, more than 24,000 state and local governments worldwide, and many others in dozens of industries. Private ownership, a zero-debt policy, and a firm commitment to fulfilling the needs of our customers all help Esri maintain its position as the world leader in GIS software.

As a socially conscious business, we are proud that our technology is used by many organizations who apply location-based insights to solve problems and make our world a better place to live. We also actively support organizations involved in education, conservation, sustainable development, and humanitarian affairs.

• A clear and concise statement of the topic addressed;

In addition to making data accessible via web services (see Esri's response to question 1) and easier to integrate (see Esri's response to questions 3 and 6), the PDS should improve search capabilities to make data easier to discover. Without robust search capabilities, even data published on a server in a common format will be difficult to incorporate into the research projects that need it. The PDS should expand its existing portal interface to make data more discoverable and searchable by users. This improved portal should also support rich metadata so users can quickly evaluate the currency, accuracy, methodology, and attributes of the data they find.

• An articulate and compelling rationale for why the chosen topic would be significant to a wide range of planetary scientists;

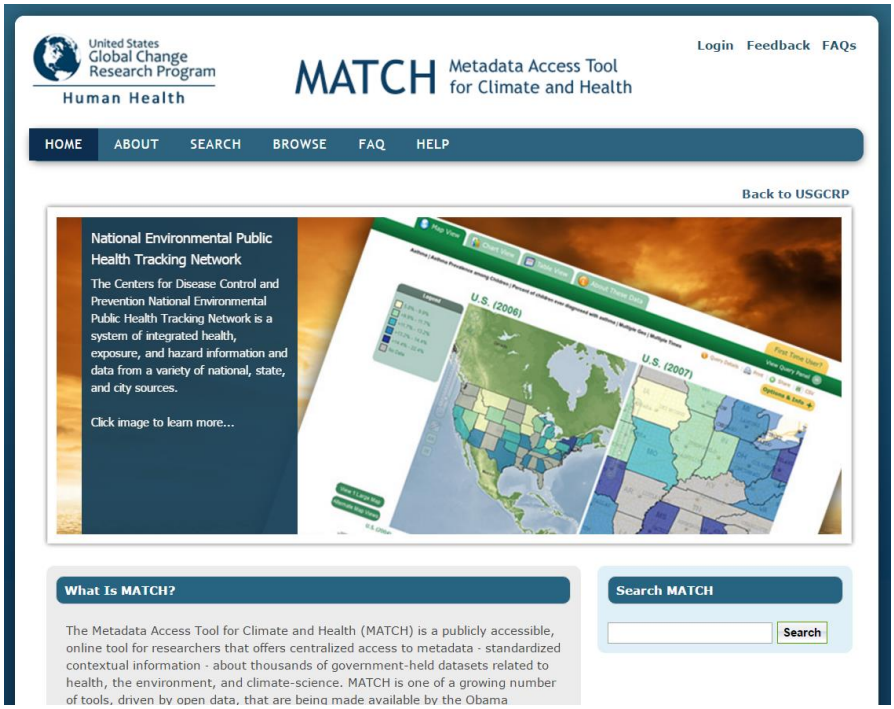
Without proper search capabilities, important data is undiscoverable and cannot be used in research projects. The PDS needs to provide the best possible search capabilities so planetary scientists, educators, research institutions, and citizen scientists can find the data the PDS wants to make available. This, in turn, will improve the effectiveness of these research projects as well as the value of PDS data.

Utilizing a portal interface that can support many different file types and aggregate multiple other data portals will allow the PDS to publish data in a way that is easy to explore. Users will be able to search for data and filter it by key metadata, reducing the time spent searching for specific data. In addition, a portal will standardize the presentation of data from multiple groups, making the search experience uniform for users. This not only saves time but makes it more likely for users to return for additional data.

• Suggested improvements or changes relevant to the topic;

We recommend the PDS use Esri's ArcGIS platform to deploy a portal that helps users search for and discover PDS datasets from a centralized site. The ArcGIS Open Data application and GeoPortal Server make it easier to document and catalog available datasets that can already be served using ArcGIS. An ArcGIS portal will allow users to search for data, explore data, view detailed metadata, and access data in standard formats. In addition, the PDS will be able to deploy the ArcGIS Open Data application with a single click—it is built on top of ArcGIS and doesn't require the PDS to publish a second set of data or configure a second set of servers. Together, this will allow the PDS to participate in the ArcGIS Online community, fostering easier collaboration and sharing of cartographic products with the GIS user community.

For example, the Metadata Access Tool for Climate and Health (MATCH) is a publicly accessible, online tool for researchers. It offers centralized access to metadata—standardized contextual information—about thousands of government-held datasets related to health, the environment, and climate-science. We believe the PDS could do something similar to achieve your goals for accessibility and sharing.



[Metadata Access Tool for Climate and Health (MATCH)] is a publicly accessible, online tool for researchers

In addition, the PDS should standardize a set of product naming conventions that make it easy to identify datasets by their names. Different organizations, data providers, and data creators may refer to data in different ways, making it difficult for users to search for the data they need. By standardizing these naming conventions, searches can be faster and more accurate.

• A discussion of the impact of not making the suggested improvements or changes; and,

If the PDS does not improve search capabilities, then users will be less able to find the data they need. They will either spend too much time searching for data, or will give up their search in frustration. This will make it more difficult for the PDS to engage with the public, share data with educators and research institutions, and contribute to the ConnectED initiative.

• A discussion of the potential impacts of the suggested improvements or changes.

Users will be able to quickly find and understand the characteristics of PDS datasets. This will help the PDS more effectively engage with the public, share data with educators and research institutions, and contribute to the ConnectED initiative.